

# PATENT SPECIFICATION

DRAWINGS ATTACHED

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## COMPLETE SPECIFICATION

### Improvements in and relating to Brushes, more especially Paint Brushes

I, ALEXANDER LITTLEJOHN RUXTON, a British Subject, of 34, Melody Road, Wandsworth, London, S.W.18, do hereby declare the invention for which I pray that a patent may be granted to me and the method by which it is to be performed to be particularly described in and by the following statement:—

This invention relates to brushes, and more especially paint brushes as used for house-decoration and like purposes.

The object of the invention is to provide a simple and effective form of brush which can easily be cleaned.

With this end in view the invention consists in a bristle unit for a brush comprising a flat thin strip element, flexible for rolling, or creased or articulated for folding, or a flat thin plate element adapted to be held in face-to-face relationship with the other like elements in order to form a pack, the element having bristles rigidly secured by one end to or integral with, the strip element and projecting from one edge thereof.

The invention further consists in a brush comprising a plurality plate of elements such as specified in the next preceding paragraph assembled face to face, or a strip element such as specified in the next preceding paragraph rolled or folded into compact form, removably mounted in a holder such as a frame or casing adapted to hold them/it firmly together with the bristles projecting therefrom.

The strip may be flexible for rolling or the plate elements may be articulated together, edge to edge, in a row, allowing it/them to be assembled as a pack by folding together e.g. concertina-fashion. The frame or casing may be formed of two half-portions adapted to be folded together to lock the pack of elements or the rolled or folded element between them and preferably adapted to be held in locked position by screw threaded means,

which may conveniently be a handle adapted to screw on to abutments of the frame or casing. The bristles may be formed integral with, or encased in the unit during the moulding operation.

The invention will be clearly understood from the following description of one form (given, however, merely by way of example) which it may assume, and this description will be more readily followed by reference to the drawings accompanying the provisional specification of this invention herewith wherein:—

Figure 1 represents in exploded perspective the various parts of a paint brush according to the invention;

Figure 2 represents in side elevation, partly broken away, the parts shown in Figure 1 when assembled as a brush, and

Figure 3 shows, in perspective, a plurality of bristle units for a brush according to the invention: and by reference to the further drawings herewith wherein:—

Figure 4 represents a slightly modified form of bristle unit according to the invention, and

Figures 5 and 6 represent front and side elevations of a brush handle and holder suitable for receiving a removable bristle assembly according to the invention.

In carrying the invention into effect in one convenient manner as shown in the aforesaid drawings a bristle unit for a brush comprises a thin strip or sheet 1 (Figure 3), from one longer edge of which project a line of bristles or bristle tufts 2. The bristles may be of synthetic resin, or of conventional animal hairs. The strip or sheet 1 is preferably of moulded synthetic resin, and the bristles may be embedded in the strip or sheet during moulding of the latter, or if they are themselves of synthetic resin may be formed during moulding as integral parts of the strip or sheet.

To form the working portion of a brush a plurality of the above described units are

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assembled face to face in a pack, with all bristles projecting from one side of the pack, as shown in the lowermost part of Figure 1 of the aforesaid drawings. The units may be  
 5 separately formed, but it is preferred that a plurality of them shall be articulated together end to end, as seen in Figure 3. Conveniently these units may be formed as a strip e.g. by  
 10 continuous ejection moulding, and the strip scored or creased transversely for weakening, thus allowing folding, at selected points between adjacent units. Since folding is to be  
 15 in opposite senses at adjacent fold lines the scoring or creasing at successive points may be on opposite sides of the strip. Alternatively the units may be separately formed and subsequently secured together end to end by  
 hinge-links, e.g. an adhesive link.

To form a brush a plurality of units such as described above assembled as a pack is held firmly together by a frame or casing. The casing may be in the form of a box-like structure open or apertured on one side to accommodate the bristles while the casing clamps  
 25 the pack of strips or sheets 1. Preferably the casing is longitudinally split to form two halves 3 and 4 (Figure 1) capable of opening and closing bookwise. These parts may be integral with one another at one end (Figure 1) and formed of material, e.g. moulded synthetic resin, providing a slight spring action  
 30 tending to open the two halves. Alternatively the halves may be formed separately (either of synthetic resin or any other suitable material) and hinged together at one end. The upper corners of the casing may be internally and/or externally rounded, as shown,  
 35 and the strips or sheets 1 may be similarly shaped to fit in the casing.

Each half of the casing has at its mid-point on its upper closed side, a semi-cylindrical abutment 5, 6 screw threaded on its curved surface. When the halves of the casing are closed together these abutments come together  
 45 to form a screw-threaded cylinder on to which can be engaged the internally threaded end 7 of a handle 8 of conventional form. The handle is adapted to force together the abutments 5 and 6, and thus the casing sections  
 50 3 and 4, to clamp the pack of strips 1 therein, with the bristles projecting through the open side of the casing. If desired the abutments 5 and 6 may each have an upstanding semi-conical portion (not shown) to engage in  
 55 a conical recess in the handle 8 above its threaded sleeve 7, in order to increase the clamping action as the handle is screwed on to the casing. Also if desired the strips 1 may be longitudinally ribbed, and the inner  
 60 surfaces of the casing similarly ribbed to assist in locking the strips in the casing. The free ends of the bristles may be cut to shape after assembly if a brush of shaped form is desired.

65 Slightly modified forms of bristle unit and

holder according to the invention are shown in Figs. 4, 5 and 6 of the drawings herewith. In a bristle unit as shown in Fig. 4 the bristles  
 2 are formed at, secured by moulding into, the edge of a thin flexible strip 9, e.g. of  
 70 synthetic resin. A suitable length of this strip is folded or rolled together to form a bristle assembly, similar to that shown in Fig. 1, suitable for removable mounting in a handled  
 75 holder in order to form a brush. If desired the strip may be rolled round a wedge- or like shaped block, forming a core to stiffen the assembly for mounting in the holder. Such  
 80 holder may be as shown in Figs. 1 and 2, or with either form of bristle assembly described above there may be employed a slightly modified form of holder as shown in Figs.  
 5 and 6 of the drawings herewith. In this the handle 8 is integral with the holder  
 85 proper 10 which is hollow and longitudinally split at the sides as at 11. The bristle assembly is inserted into the mouth of the holder 10 and a slidable sleeve 12 moved down to engage  
 90 the holder thereby forcing together the jaws of the holder (which have a degree of springiness) in order to clamp the bristle assembly. The jaws may be provided with internal edge  
 95 lips to grip the bristle assembly and an outer flange 13 may be provided serving as a stop for the sleeve 12. The handle 8 and jaws 10 may conveniently be molded as an integral unit of synthetic resin.

From the above description it will be seen that the bristle units can be rapidly and cheaply made, as also can the casing and  
 100 handle sections, and readily assembled to form a brush. For cleaning the handle can easily be unscrewed, to allow removal of the bristle units from the opening casing, these  
 105 units being then opened out into a straight strip, or separated from one another, for easily removing paint and dirt.

It should be understood, however, that the invention is not limited to paint brushes, since it may be applied to brushes used for many  
 110 other purposes, and is not restricted to the details of the form described above, which may be modified in order to meet various conditions and requirement encountered without departing from the scope of the invention.

#### WHAT I CLAIM IS:—

1. A bristle unit for a brush comprising a flat thin strip element, flexible for rolling, or creased or articulated for folding, or a flat thin plate element adapted to be held in face-to-face relationship with other like elements in order to form a pack, the element having  
 120 bristles rigidly secured by one end to, or integral with, the strip element and projecting from one edge thereof.

2. A bristle unit as claimed in Claim 1 wherein the, or each, element is of molded plastic sheet or strip, the bristles being incorporated therein, or formed integrally therewith, during the moulding operation.

3. A brush comprising a plurality of plate elements as claimed in Claim 1, assembled face to face, or a strip element as claimed in Claim 1 rolled or folded into compact form, removably mounted in a holder such as a frame or casing adapted to hold them/it firmly together, with the bristles projecting from the frame or casing.
4. A brush as claimed in Claim 3 wherein the frame or casing comprises parts releasably securable together, e.g. by screw or clamp means, adapted to encase and clamp together the strip or plate elements.
5. A brush as claimed in Claim 3 or 4 wherein the frame or casing comprises elastically-connected side members adapted to spring apart for insertion of a bristle assembly, and to be clamped together in order to grip the bristle assembly by a separate handle de-

tachably securable thereto, or by a slidable gripping device, e.g. a sleeve, associated therewith. 20

6. A bristle unit or assembly for a brush substantially as described herein with reference to the drawings accompanying the provisional specification herewith, or to the further drawings herewith. 25

7. A brush comprising a plurality of bristle unit removably mounted in a frame or casing, substantially as described herein with reference to the drawings accompanying the provisional specification herewith, or to the further drawings herewith. 30

W. H. BECK, GREENER & CO.,  
Chartered Patent Agents,  
7, Stone Buildings, Lincoln's Inn,  
London, W.C.2.

### PROVISIONAL SPECIFICATION

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This invention relates to brushes, and more especially to paint brushes as used for house-decoration and like purposes.

The object of the invention is to provide a simple and effective form of brush which can easily be cleaned.

With this end in view the invention consists in a bristle unit for a brush comprising a strip or plate element provided with bristles projecting from one edge.

The invention further consists in a brush comprising a plurality of units such as specified in the next preceding paragraph assembled face to face as a pack, with the bristles projecting from the corresponding adjacent edges of the units, and held tightly together by a frame or casing. The strip or plate units may be articulated together, edge to edge, in a row, allowing them to be assembled as a pack by folding them together concertina-fashion. The frame or casing may be formed of two half-portions adapted to be folded together to lock the pack of units between them, and preferably adapted to be held in locked position by screw threaded means, which may conveniently be a handle adapted to screw on to abutments of the frame or casing. The units may be of thin strip or sheet of molded plastic material, and the bristles may be formed integral with, or encased in the units during the moulding operation.

The invention will be clearly understood from the following description of one form (given, however, merely by way of example) which it may assume, and this description

will be more readily followed by reference to the accompanying drawings wherein:— 75

Figure 1 represents in exploded perspective the various parts of a paint brush according to the invention;

Figure 2 represents in side elevation, partly broken away, the parts shown in Figure 1 when assembled as a brush; and 80

Figure 3 shows, in perspective, a plurality of bristle units for a brush according to the invention.

In carrying the invention into effect in one convenient manner as shown in the accompanying drawings a bristle unit for a brush comprises a thin strip or sheet 1 (Figure 3), from one longer edge of which project a line of bristles or bristle tufts 2. The bristles may be of synthetic resin, or of conventional animal hairs. The strip or sheet 1 is preferably of moulded synthetic resin, and the bristles may be embedded in the strip or sheet during moulding of the latter, or if they are themselves of synthetic resin may be formed during moulding as integral parts of the strip or sheet. 85

To form the working portion of a brush a plurality of the above described units are assembled face to face in a pack, with all bristles projecting from one side of the pack, as shown in the lowermost part of Figure 1 of the drawings herewith. The units may be separately formed, but it is preferred that a plurality of them shall be articulated together end to end, as seen in Figure 3. Conveniently these units may be formed as a strip e.g. by continuous ejection moulding, and the strip scored or creased transversely for weakening, thus allowing folding, at selected points between adjacent units. Since folding is to be in opposite senses at adjacent fold lines the 110

scoring or creasing at successive joints may be on opposite sides of the strip. Alternatively the units may be separately formed and subsequently secured together end to end by hinge-links, e.g. an adhesive link.

To form a brush a plurality of units such as described above assembled as a pack is held firmly together by a frame or casing. The casing may be in the form of a box-like structure open or apertured on one side to accommodate the bristles while the casing clamps the pack of strips or sheets 1. Preferably the casing is longitudinally split to form two halves 3 and 4 (Figure 1) capable of opening and closing bookwise. These parts may be integral with one another at one end (Figure 1) and formed of material, e.g. moulded synthetic resin, providing a slight spring action tending to open the two halves. Alternatively the halves may be formed separately (either of synthetic resin or any other suitable material) and hinged together at one end. The upper corners of the casing may be internally and/or externally rounded, as shown, and the strips or sheets 1 may be similarly shaped to fit in the casing.

Each half of the casing has at its midpoint on its upper closed side, a semi-cylindrical abutment 5, 6 screw threaded on its curved surface. When the halves of the casing are closed together these abutments come together to form a screw-threaded cylinder on to which can be engaged the internally threaded end 7 of a handle 8 of conventional form. The handle is adapted to force together the abutments 5 and 6, and thus the casing sections 3 and 4, to clamp the pack of strips 1 therein,

with the bristles projecting through the open side of the casing. If desired the abutments 5 and 6 may each have an upstanding semi-conical portion (not shown) to engage in a conical recess in the handle 8 above its threaded sleeve 7, in order to increase the clamping action as the handle is screwed on to the casing. Also if desired the strips 1 may be longitudinally ribbed, and the inner surfaces of the casing similarly ribbed to assist in locking the strips in the casing. The free ends of the bristles may be cut to shape after assembly if a brush of shaped form is desired.

From the above description it will be seen that the bristle units can be rapidly and cheaply made, as also can the casing and handle sections, and readily assembled to form a brush. For cleaning the handle can easily be unscrewed, to allow removal of the bristle units from the opening casing, these units being then opened out into a straight strip, or separated from one another, for easily removing paint and dirt.

It should be understood, however, that the invention is not limited to paint brushes, since it may be applied to brushes used for many other purposes, and is not restricted to the details of the form described above, which may be modified, in order to meet various conditions and requirements encountered without departing from the scope of the invention.

W. H. BECK, GREENER & CO.,  
Chartered Patent Agents,  
7, Stone Buildings, Lincoln's Inn,  
London, W.C.2,  
Agents for the Applicant.

FIG. 1.

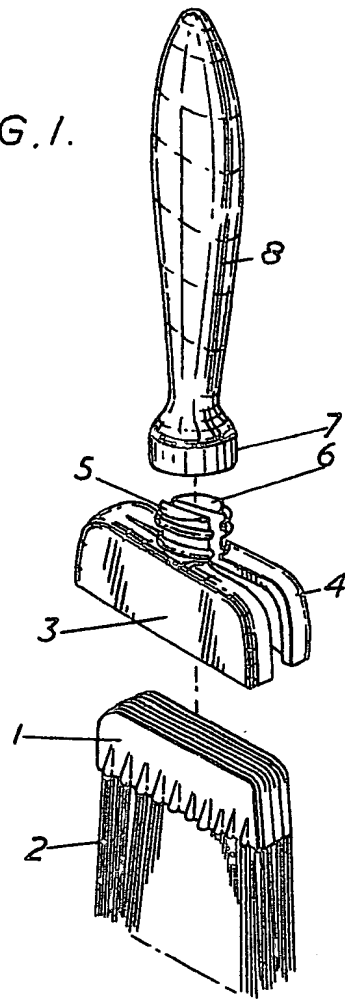


FIG. 2.

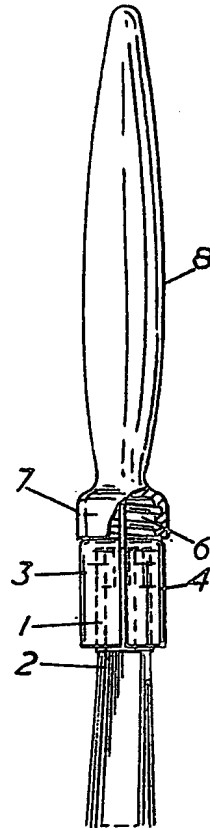


FIG. 3.

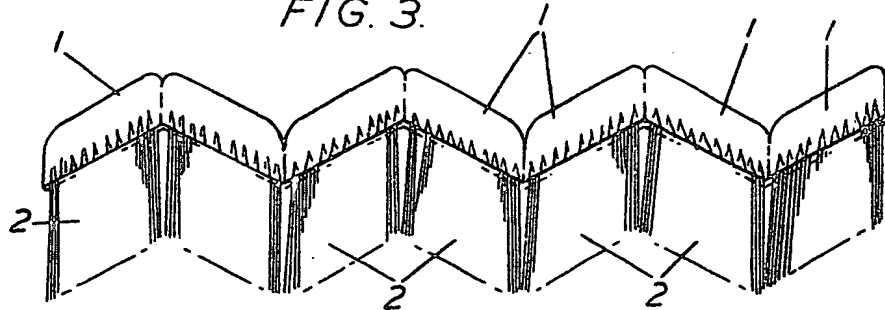


FIG. 5.

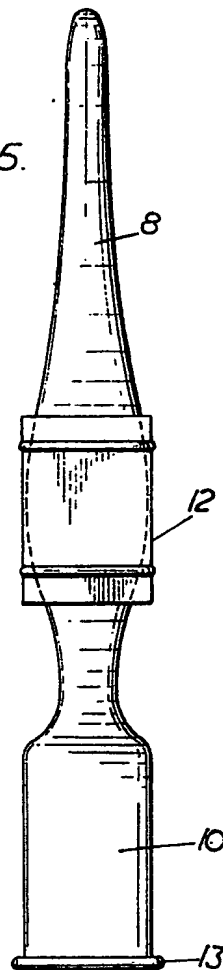


FIG. 6.

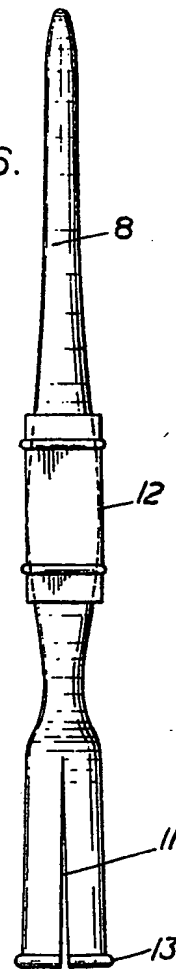


FIG. 4.

